
**METHODS AND APPARATUS FOR OVERDRIVE PACING HEART
TISSUE USING AN IMPLANTABLE CARDIAC STIMULATION DEVICE**

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Abstract of the Disclosure

Techniques are described for overdrive pacing the heart using a
pacemaker wherein the overdrive pacing rate only increases when at
10 least two intrinsic beats are detected within a determined search period.
In one specific technique, an increase in the pacing rate occurs only if two
P-waves are detected within X cardiac cycles. In another specific
technique, the overdrive pacing rate is increased only if at least two
P-waves are detected within a block of N cardiac cycles. In both
15 techniques, the overdrive pacing rate is decreased if no increase has
occurred in the last Z cardiac cycles. By increasing the overdrive pacing
rate only in response to detection of at least two P-waves within a
determined number of cardiac cycles, an excessively high overdrive
pacing rate is avoided. Other techniques are described for adaptively
20 adjusting overdrive pacing parameters so as to achieve a determined
target degree of pacing of, for example, 95% paced beats. By adaptively
adjusting overdrive parameters to maintain a target degree of pacing, the
average overdrive pacing rate is minimized while still maintaining a high
number of paced beats, thereby reducing the risk of a tachyarrhythmia
25 occurring within the patient.